

NISTTech

TWO-COMPONENT STRUCTURES PROVIDING FAST-LOW TEMPERATURE CHARGING OF Mg WITH HYDROGEN [NIST 11-022]

Docket No. 11-022, Publication No. US2013-0068998

Abstract

Hydrogen may be used as a renewable fuel. For example, hydrogen may be produced by electrolysis, stored, and used as a fuel. Hydrogen fuel may be used to power fuel cells in automobile applications, for example. Storing of the hydrogen may present obstacles as hydrogen may pass through the walls of traditional high pressure gas tanks. Recently, solid materials, such as metals, have been used to chemically store and release hydrogen.

The present invention is a ;hydrogen storage material with a ;hydride-forming solid disposed in a film, a hydrogen-diffusing solid media disposed in the film with the hydride-forming solid, and a high density of interfaces between the hydride-forming solid and the hydrogen-diffusing solid media in the film. The hydrogen storage material may be made by co-depositing the hydride-forming solid and the hydrogen-diffusing solid media to form the film having different solid phases of the hydride-forming solid and the hydrogen-diffusing solid media and a high density of interfaces therebetween.

Inventors

- Bendersky, Leonid A.
- Heilweil, Edwin J.
- Tan, Zhuopeng

References

- US Patent No. 9,061,907

Status of Availability

This invention is available for licensing exclusively or non-exclusively in any field of use.

Last Modified: 05/29/2015